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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,916	03/24/2004	Eung-Joon Chi	52089/DBP/Y35	3971
23363 7590 02/02/2007 CHRISTIE, PARKER & HALE, LLP PO BOX 7068 PASADENA, CA 91109-7068			EXAMINER HO, ALLEN C	
			ART UNIT	PAPER NUMBER
			2882	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/02/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/807,916	Applicant(s) CHI ET AL.	
	Examiner Allen C. Ho	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 8-11 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 2, 5, 12-14 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 6, 9-11, and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fushimi *et al.* (U. S. Patent No. 5,936,343).

With regard to claim 1, Fushimi *et al.* disclosed a field emission display that comprises: a first substrate (101) and a second substrate (112) facing one another and having a predetermined gap therebetween; an electron emission assembly (102) formed on the first substrate for emitting electrons; an illumination assembly (111) formed on the second substrate for displaying images responsive to electrons emitted from the electron emission assembly; and a grid plate (105) mounted between the first substrate and the second substrate, and configured to focus the electrons emitted from the electron emission assembly, wherein the grid plate includes a mask section having a plurality of apertures (202) for passing the electrons and having supports (103, 104) mounted to one side of the mask section from the first substrate, and wherein the mask section has a predetermined mask section thickness (Tc) and the supports have a predetermined support height (h), the predetermined support height being greater than the predetermined mask section thickness (column 22, lines 21-36), and wherein the supports are made of a conducting material (column 22, lines 8-14; column 22, lines 58-64).

With regard to claims 3 and 6, Fushimi *et al.* disclosed the field emission display of claim 1, wherein the mask section is formed of metal material (column 10, lines 34-43) and the supports are formed of an insulation material (column 12, lines 22-47).

With regard to claim 4, Fushimi *et al.* disclosed the field emission display of claim 1, wherein the supports are formed between a predetermined array of the apertures formed in the mask assembly, the supports being formed in at least one of along a direction substantially identical to a direction of the array of the apertures, and along a direction substantially perpendicular to the direction of the array of the apertures (Fig. 4A).

With regard to claim 9, Fushimi *et al.* disclosed the field emission display of claim 1, wherein a sectional aspect ratio of each of the aperture formed in the mask section is 5:1 - 1:1 (column 13, lines 28-30).

With regard to claim 10, Fushimi *et al.* disclosed the field emission display of claim 1, wherein the electron emission assembly comprises electron emission sources (102) and electrodes for causing the emission of electrons from the electron emission sources, wherein the electrodes include cathode electrodes (403) and gate electrodes (404) formed in a stripe pattern (Fig. 4A), and wherein the cathode electrodes and the gate electrodes are substantially perpendicular to one another and insulated from one another by an insulation layer (column 19, lines 22-25).

With regard to claim 11, Fushimi *et al.* disclosed the field emission display of claim 10, wherein the electron emission sources are made of a carbon-based material (column 20, lines 39-41).

With regard to claim 15, Fushimi *et al.* disclosed the field emission display of claim 10, wherein the supports are mounted on the insulation layer (column 19, lines 22-25).

With regard to claim 16, Fushimi *et al.* disclosed the field emission display of claim 1, further comprising: an auxiliary insulation layer formed on an upper most layer of the first substrate (column 19, lines 22-25), and the supports are mounted on the auxiliary layer.

With regard to claims 17 and 18, Fushimi *et al.* disclosed a grid plate apparatus that comprises: a grid plate including a mask section (105) having a predetermined mask section thickness (T_c) and having a plurality of apertures (202) through the predetermined mask section thickness in a predetermined pattern; and a plurality of support (103, 104) having a predetermined support height (h), wherein the predetermined support height is greater than the predetermined mask section thickness (column 22, lines 21-36), and wherein the supports are made of a conducting material (column 22, lines 8-14; column 22, lines 58-64). Note: The claims are interpreted by the examiner to claim the structure of a grid plate. Consequently, structures that are not part of the grid plate are not given patentable weight.

With regard to claim 19, Fushimi *et al.* disclosed the grid plate apparatus of claim 17, wherein material forming the mask section and the supports are selected from the group consisting of: the same conducting material for both the mask section and the supports, and different conducting materials having different etching rates for the mask section and the supports respectively (different conducting materials would have different etching rates).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fushimi *et al.* (U.S. Patent No. 5,936,343) as applied to claim 1 above.

With regard to claim 8, Fushimi *et al.* disclosed the field emission display of claim 1, wherein each of the apertures formed in the mask section has a size in the range of 20-100 μm (column 13, lines 29-30).

However, Fushimi *et al.* failed to disclose that the mask section is formed to a thickness of 20 - 100 μm .

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the mask section having a thickness of 20 - 100 μm , since a person would be motivated to produce a desired electron-emitting characteristic by changing various parameters according to equation (1).

Allowable Subject Matter

5. Claims 2, 5, 12-14, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 21 November 2006 with respect to claims 8, 17-19, and 21 have been fully considered and are persuasive. The rejections of claims 8, 17-19, and 21 have been withdrawn.

7. Applicant's arguments filed 21 November 2006 with respect to claims 1, 3, 4, 6, 7, 9, 10, 12, 13, 15, and 17-21 have been fully considered and are persuasive. The rejection of claims 1, 3, 4, 6, 7, 9, 10, 12, 13, 15, and 17-21 under 35 U.S.C. 102(e) as being anticipated by Takenaka *et al.* (U. S. Patent No. 6,583,549 B2) has been withdrawn.

8. Applicant's arguments filed 21 November 2006 have been fully considered but they are not persuasive.

The applicants argue that Fushimi *et al.* failed to disclose supports made of a conducting material. The examiner respectfully disagrees. Fushimi *et al.* disclosed embodiments where the supports are made of a conducting material (column 22, lines 8-14; column 22, lines 58-64).

Therefore, the rejection is being maintained.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Allen C. Ho, Ph.D.
Primary Examiner
Art Unit 2882

30 January 2007